

## Education and Labour in Kazakhstan

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**Abstract:** At present, young graduates entering the labour market face various difficulties. This article evinces that the connection between education, income and productivity in Kazakhstan, resulting from an imbalance between the demand and supply of labour, has created a mismatch between available vacancies and offered labour services. One possible solution is encouraging student competitiveness. Data were obtained by surveying university students; the results indicate the importance of educational level in achieving satisfactory results in the labour market. Thus, promoting education should remain a priority for countries wherein a substantial proportion of the workforce receives education only at the initial level.

### 1. Description of the Problem

Kazakhstan has recently entered the World Trade Organisation and is being integrated into the global economy, thereby enabling a new type of economic growth with the use of knowledge, human capital and innovation as its most important benefits. The notable economic growth in Kazakhstan has contributed to a sharp reduction in poverty and unemployment (especially among young people) as well as to reduced income inequality and expanded access to education. However, the country still faces serious problems that are related to educational quality and employment, that is, equal access to education and the level of wages.

It is difficult to disagree with the opinion of F. Neumann that education is a special element of human capital. He identified its four main components as follows: cultural and ethnic features, general education, professional education and key qualifications [1].

Currently, while there is a demand for qualified personnel, the need to create a qualitatively different educational system that meets the labour market's requirements and those of society has increased substantially. In particular, the educational system should be considered a consistently innovative process for general and vocational training at various levels and a lifelong educational process, with the aim of increasing one's professional and personal qualities to a level that meets contemporary requirements.

Just as economic capital can be increased through labour, human capital can be increased through education. Education, in the broadest sense, is an activity that increases human capital. The renowned labour economist Jacob Mincer related wages to a worker's level of educational attainment. In 1958, he developed a single-equation model that represented wages as a function of training and work experience (i.e. the Mincer earnings function).

In one of its basic settings, the logarithm of wages is presented as the sum of the number of years of study and a quadratic function of the number of years of work experience [2,3], as indicated below.

$$\ln w = \ln w_0 + \rho s + \beta_1 x + \beta_2 x^2 \quad (1)$$

In the above equation, that is, the Mincer earnings function, the variables have the following meanings:  $w$  is earnings (the intercept  $w_0$  is the earnings of a person with no education or experience),  $s$  represents the number of years of education and  $x$  is the number of years of potential labour market experience. The parameters  $p$  and  $\beta_1, \beta_2$  can be interpreted as returns on education and experience, respectively.

In general, a review of domestic and foreign sources on the topic of this article yields the conclusion that despite on-going research in the field of competition theory, the problems of graduate competitiveness in the labour market have yet to be fully clarified. The principles of the final product of a university's activities are not fully understood. An educational service or a competitive graduate should be the result (product) of their work.

At present, higher education differs from higher education in the past. In particular, the existence of an innovative economy prompts changes in technological processes, which creates demand for specialist training. The rate of the obsolescence of knowledge is growing. Following graduation, university students must update their professional knowledge. As numerous authors have noted, continuous 'lifelong' training is necessary; in addition, a systematic professional reorientation of specialists at different stages of their career is essential [4-6]. Therefore, educational institutions are faced with the task of creating new competencies, that is, skills that are not related to obtaining ready-made knowledge but to investigating and analysing necessary information and self-education. Educational institutions should strive to develop programmes that meet the needs and requirements of consumers, future employers and other stakeholders.

## 2. Education and the Labour Market: Analysis of Patterns

Education and vocational training are central to any effort to increase productivity in the country as well as to enhance people's chances of finding not only a job but also quality work. In general, the higher the educational level is, the more successful a person can be in the labour market and the more opportunities they might have to acquire a more advantageous position and protect themselves from unemployment. At the national level, there is a positive correlation between the share of highly educated adults in the labour force and the per capita income of a country [7,8]. An increase in education is associated with a reduction in income inequality, and national educational allocations (per student) have a strong influence on the national distribution of income [9].

Given the aforementioned relationship between education, the results of labour market participation and economic indicators, in this article, we analyse education-related statistics using data from the Republic of Kazakhstan (RK) [10]. In 2018, its labour force totalled 9.1 million people; of this number, 444,000 were unemployed (see Figure 1). Among women, unemployment was 10% higher.

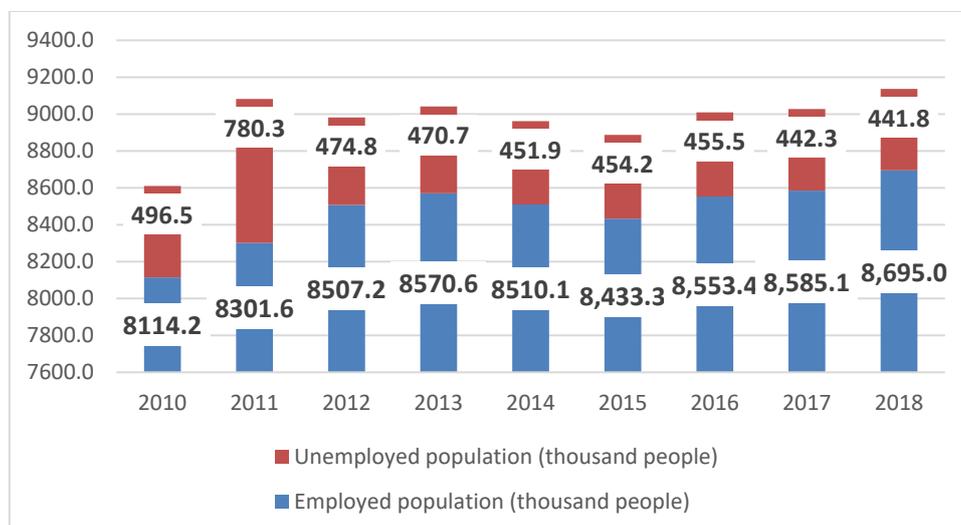


Figure 1 Total number of employed and unemployed people, 2010–2018.

An analysis of dynamic economic indicators demonstrates an annual decline in unemployment in the RK (see Figure 2). If we consider the period between 2001 and 2018, a sudden jump in the unemployment rate can be observed in 2001 (10.4%). There was a subsequent decrease in this economic indicator; in 2007, it reached 7.3%. During the 2008–2009 period, the relative number of unemployed persons in Kazakhstan remained stagnant at 6.6%. Thus, over the past 17 years, there has been no increase in unemployment except in 2015, when the unemployment rate rose to 5.1% from 5% in 2014. The largest number of unemployed persons prevails in the 29–34 age group, comprising 28% (122,900) of the total number of unemployed people (see Figure 3).

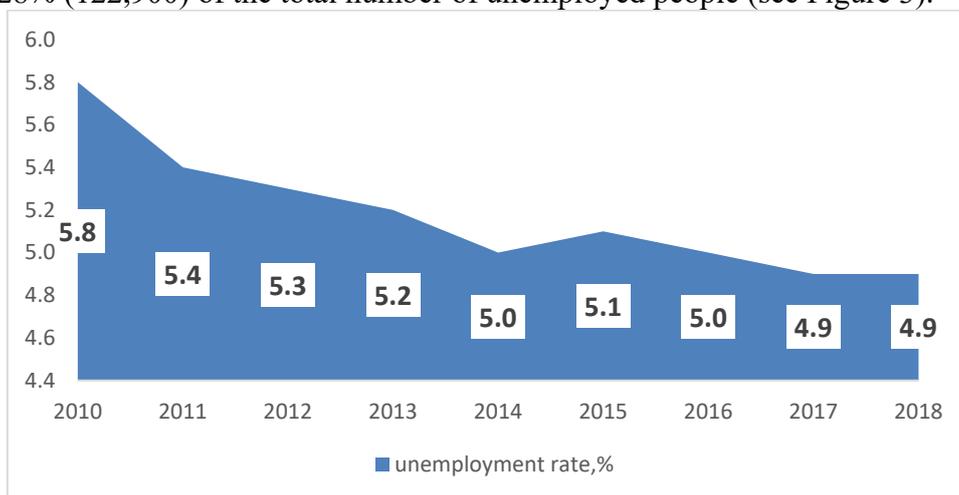


Figure 2 Unemployment rate, 2001–2018 (as a percentage).

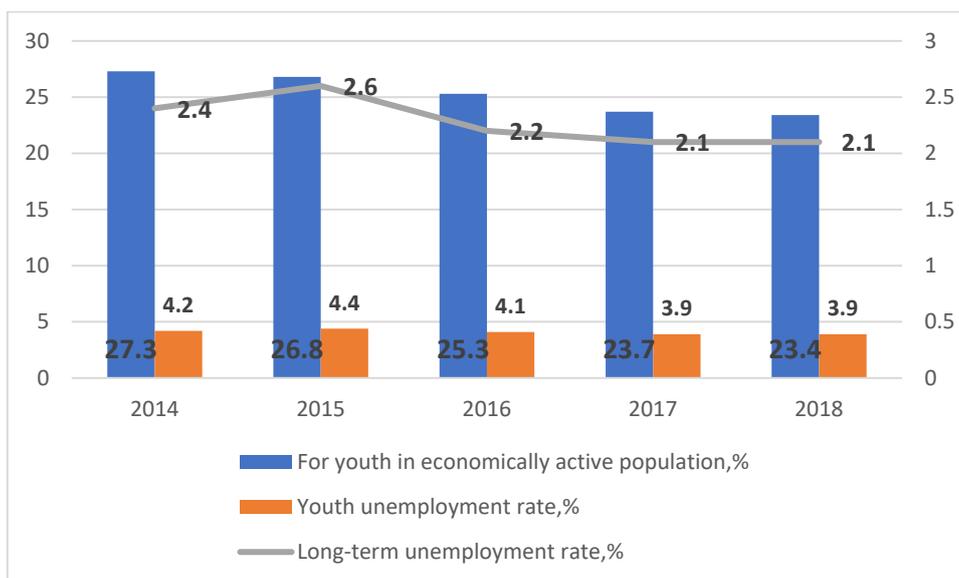


Figure 3 Key youth employment indicators, 2014–2018.

Table 1 Overall picture of employed youth

Indications	Unit	2019
Number of employed youth	million people	2,0
20–28 years	per cent	95,6
Have a higher education	per cent	42,9
Busy in the city	per cent	55,3
Wage-earners	per cent	76,1
Self-employed	per cent	23,9
Men	per cent	54,3

Source: Data of the Committee on Statistics of the Ministry of National Economy of the RK. [10]

Among the unemployed, 71% have an education, 26% have a higher education and 45% have a secondary and a primary vocational education. Further, 2.2% have partially completed their higher

education, and 26.8% have completed their secondary education. An overall picture of the RK's employed youth is shown in Table 1 below. Specialists with a higher level of education find work in their specialty more often than employees with only a professional vocational education (84% of cases versus 66%).

Enterprises experience a deficit in employees with working specialties, while among the unemployed, this proportion is insignificant. Unemployed people with a higher level of education rarely agree to take jobs that do not require high qualifications. The trends in total and universal higher education have led to a sharp increase in the number of such workers. As a result, we can observe a considerable imbalance between the demand and supply of labour in terms of the level of professional education [11]. Another aspect of the problem under consideration is the mismatch between the vacancies that are offered and the labour services that are available in the context of specialties and training areas.

By early 2010, the annual productivity growth rate fell to an average lower than 2%, and between 2014 and 2016, productivity growth became negative, dropping by approximately 2% annually. In 2017, labour productivity increased by 4.4%; in 2018, it increased by 8.5% from 2015.

The market for educational services in Kazakhstan is represented by a wide variety of secondary, higher and additional professional educational institutions (see Table 2). The Ministry of Education compiled a list of the prospective needs of the labour market—including specialties (i.e. the state order for the training of specialists with higher education)—for educational institutions to be funded by the national budget for the 2018–2019 academic year, and 53,594 educational grants were allocated. Priority was given to technical and technological specialties, and grants in this area totalled 19,111. For teaching specialties, there were 7,635 grants, whereas 620 were allocated for the specialty 'Foreign language: two foreign languages (English)'.

Table 2 Number of educational institutions, students and faculty, 1990–2019.

	1990–1991	2000–2001	2010–2011	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019
Number of higher education institutions, units	55	170	149	126	127	125	122	126
Number of students, people	287,367	440,715	620,442	477,387	459,369	477,074	496,209	479,914
Number of faculty members	21,955	29,577	39,600	40,320	38,087	38,241	38,212	40,594

Source: Data of the Committee on Statistics of the Ministry of National Economy of the RK. [10]

In the national budget for 2020, 470.7 billion Kazakhstan Tenge (KZT) was provided for education. Of this amount, over 207 billion KZT was allocated for the development of technical, professional, higher and postgraduate education, including the training of approximately 120,000 bachelor's, master's and doctoral students. At the beginning of the 2018–2019 school year, there were 126 higher educational institutions functioning in the RK, employing 40,600 teachers, of whom 3,300 (8.5%) held doctorates in science; 13,300 (34.7%) held a candidate of science degree; 2,300 (6.1%) held the title of professor; 6,000 (15.7%) held the title of assistant professor; 1,900 (4.9%) were doctors of philosophy (PhDs) and 208 (0.5%) were professionally oriented PhDs. The number of teachers with a master's degree equalled 12,100 (31.7%).

The total number of students at the beginning of the 2018–2019 school year was 479,900 (+4% per year). Of these, 82% were full-time students and 18% were correspondence students, while 45.9% of all students were enrolled at state universities. There were 179,600 students (33.7%) who were receiving their education at the expense of state educational grants, while 354,100 students (66.3%) were paying their own tuition. Gross enrolment in higher education in the RK of the 2018–2019 school year reached 60.7%. Of those enrolled in higher education, 67.0% were women, which was a considerably higher share than that represented by men (54.7%) (see Figure 4).

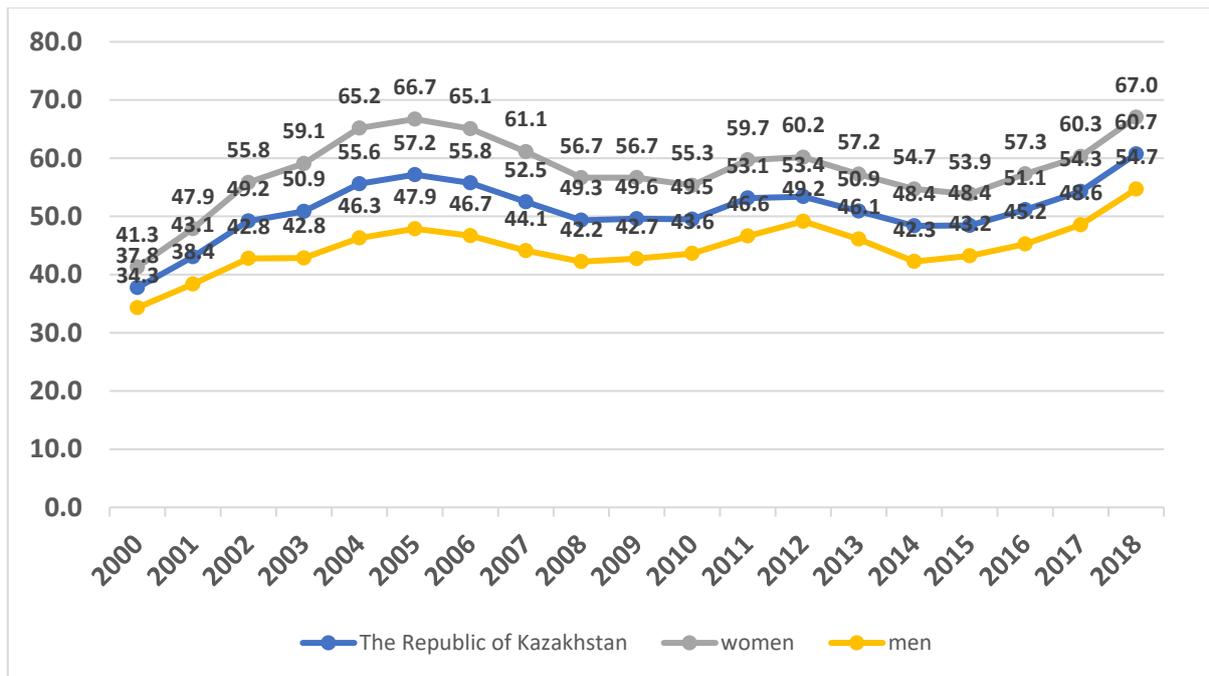


Figure 4 Gross enrolment in higher education, 2000–2018.

The aforementioned analysis indicates that in recent years, an average of 30,000–37,000 grants have been allocated for undergraduate studies and 10,000–12,000 grants for master’s degree programmes, while 36% of grants were allocated to technical specialties, 21.1% to teaching specialties and 8.4% to public health specialties. Every year, on average, 150,000–170,000 people enrol in universities, and 80% of them pay their own tuition. Approximately 110,000–120,000 people graduate from universities annually, but only around 30,000 of these graduates become employed.

The following assessment is valid for the younger generation entering the labour market. With a visible willingness to compete for a well-paid position, we can observe a phenomenon that could be called the ‘*lumpen* consciousness’ wherein the following holds:

- interest is shown mainly in jobs that reflect a high social status (e.g. popularity);
- young people have a hypertrophied idea of what represents decent pay for their labour and
- young people require a readily prepared workplace in the labour market, the place where the graduate needs to arrive in connection with their work. Since there are few jobs of this type, and few should exist in any economy, a significant gap arises between the types of jobs that are desired and those that are available.

An analysis of the labour movement in the RK indicates that through the year 2016, there was a multi-directional dynamic in which the number of university graduates increased, but the number of employed workers decreased. In 2016, there were 147,200 graduates—30,500 less than the previous year—while the number of employed persons was 106.7%, which is higher compared to the previous year. In 2018, 140,700 people were trained by universities for the labour market, which is 3% higher than the 127,100 people trained in 2017. It should be noted that 75%–80% of those who graduated in the reported year did not find employment in their specialty.

In accordance with the data of the Ministry of Labour and Social Protection, there are approximately 32,000 vacancies [12], but these vacancies do not mandate that applicants have a higher education. Unskilled workers and workers with technical specialties are required, and a great demand exists for care workers. A comparison between the needs and vacancies for jobs indicates that Kazakhstan’s labour market is characterised by an excess of unskilled labour and a lack of highly qualified personnel for individual industries (see Figure 5).

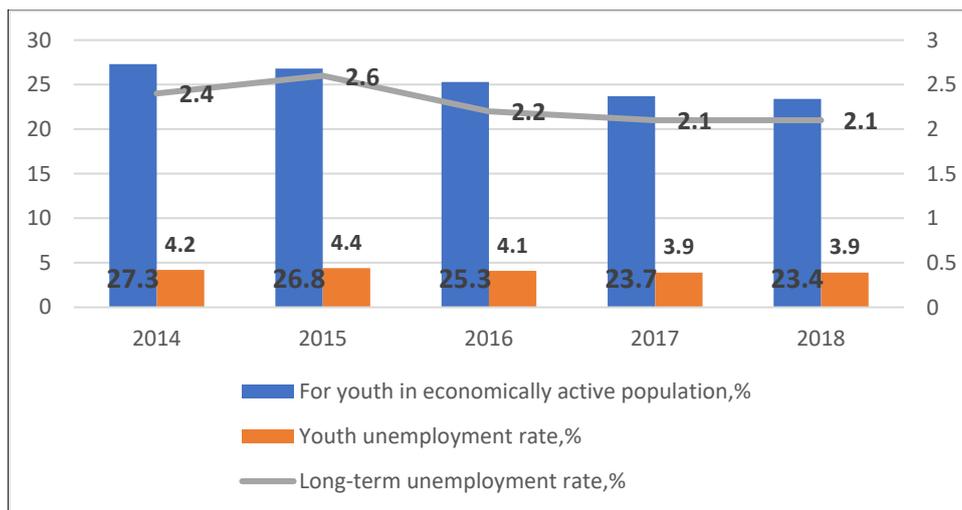


Figure 5 Ratio of output and expected labour resource needs of the economy, 2013–2018.

This situation is characteristic not only of Kazakhstan, as 40 million people seeking employment enter the global labour market annually. The fact that the educational level of the workforce is increasing does not improve the situation, according in the Geneva edition of Key labour market indicators [13]. Over the past 15 years, there has been an increase in the share of workers with a higher education. A positive effect has been noted on the private, national and global levels, as there is a clear relationship between the educational level of workers and the level of national labour productivity. However, having a more advanced educational diploma does not guarantee that its holder is more likely to find a job. In low- and lower-middle-income countries, university graduates are more likely than workers with a lower level of education to be among the unemployed. This is due to a mismatch in the educational levels of workers and the number of available jobs that meet their skills and expectations. The oversupply of the labour force provokes states to value human resources less and less, which leads to the depreciation of both labour and skills.

In modern conditions, one solution to the problem of employing young specialists is the implementation of the personality-oriented employment principle, which associates the professional and personal characteristics of a graduate with an enterprise's personnel needs [14].

### 3. Employment of Graduates as a Manifestation of Their Competitiveness

Such a solution to the employment problem of graduates is to foster their competitiveness. Youth competitiveness has a distinctive feature: it is undeveloped, or latent, in nature. When assessing graduates who are on the verge of entering the labour market, usually with no previous professional experience, we can only determine their potential ability to compete, which requires taking a special methodological and theoretical approach [15]. A competitive specialist is not only the product of an educational institution but also an individual with certain psychophysiological properties and qualities.

The competitiveness of a graduate depends on the influence of social institutions such as universities, recruiting agencies and employers; accordingly, market conditions determine the task of increasing the competitiveness of university graduates, which will ultimately increase the competitiveness of a university in the educational services market.

Along with strengthening requirements, most employers are not satisfied with the quality of the training of specialists who have graduated from universities. Study programmes do not always meet employer expectations and therefore do not fulfil the needs of the economy [16].

Problems with the employment of Kazakhstani youth have led to the determination of the factor of employment of university graduates as a criterion for university ratings, attributing responsibility for students' subsequent employment to universities [17]. The International Labour Organization (ILO) reported that almost six out of 10 employees worldwide work part-time or have only temporary employment (ILO, n.d.). In advanced economies, the standard employment model is becoming less

dominant, and informal employment is becoming more widespread in many countries [18,19]. In this regard, experts of the ILO propose creating new forms of employment based on innovative technologies and changes in enterprises' organisation of production. In addition, these experts recommend that states expand the social and legal protections that are available to all workers, regardless of their form of employment [20,21].

The complexity of employment is associated not only with the quality of education but also with the economic situation and the global crisis. The innovativeness of the economy and the manufacturability of production reduce the demand for labour. The problem lies in the lack of connection between the education market and the labour market. The educational system has thus far failed to train a sufficient number of qualified specialists for various economic sectors. This hinders the realisation of the economy's existing potential.

A more integrated approach to cultivating professional skills and manpower management, beyond mere formal education, would foster the importance of small and medium-sized businesses, establish new opportunities and attract and retain qualified specialists. The formation of professional skills has always been the prerogative of the educational system. Students' readiness for professional activities and skills can be encouraged in the process of teaching professional practice.

In this situation, it is important to determine students' readiness for future professional activities and for performing practical tasks. The validity of professional choice is considered a necessary component of a specialist's competitiveness. A justified professional choice is a necessary result of the career guidance of social institutions. The lack of substantiation negatively affects the personal qualities of a future specialist, undermining the qualities of a competitive personality by reducing or distorting the need for self-realisation, affecting their business, organisational volition and other qualities. Under conditions in which applicants choose a profession based on the availability of scholarships and the possibility of attending a university, the validity of a professional choice becomes a necessary component of a specialist's competitiveness.

An analysis was conducted on the self-assessment of the formation of the qualities of a graduate's competitiveness through an online survey of graduate students across five universities for three years. University graduates were invited to perform a self-assessment according to the criteria presented in the questionnaire before and after practical training. The following criteria were selected: personal qualities, skills and professionalism and the level of motivation.

Personal qualities were evaluated according to the following criteria: perseverance, desire to assess one's strengths, creativity, mobility, determination, healthy lifestyle, creative activity, hard work, leadership ability and politeness and tact. Skills and potential professionalism were assessed according to the following criteria: the ability to create a *curriculum vitae*, professional and practical skills, the knowledge of the scientific organisation of work, the knowledge of labour safety techniques, the ability to work with an information source, the culture of written and spoken language, the ability to work with computers and office equipment, knowledge in the communication field, the ability he ability to participate in a communicative situation, proficiency in a foreign language, the ability to identify and analyse patterns, the ability to identify difficulties, the ability to identify erroneous actions and correct errors, the ability to critically analyse a situation and the ability to draw conclusions and summarise work that has been completed. The motivational criteria included forming clear objectives, a positive attitude towards professional activities, professional experience, readiness for advanced training, professional awareness and an understanding of their professional purpose. The self-assessment of student competitiveness was performed before and after practical training. A student's competitiveness was calculated according to the following formula.

$$C_{grad} = \left(\frac{PQ_2}{PQ_1}\right)^\alpha * \left(\frac{PP_2}{PP_1}\right)^\beta * \left(\frac{M_2}{M_1}\right)^\gamma \quad (2)$$

In the above equation, the variables have the following meanings:  $C_{grad}$  is the graduate competitiveness indicator;  $PQ_1, PQ_2$  is the self-assessment (in points) of personal qualities before and after practical training;  $PP_1, PP_2$  denote the self-assessment (in points) of skills and potential professionalism before and after practical training and  $M_1, M_2$  represent the self-assessment (in points)

of motivation before and after practical training. The parameters  $\alpha$ ,  $\beta$  and  $\gamma$  can be interpreted as the coefficients of the relative importance of personal qualities, skills, potential professionalism and motivation, respectively;  $\alpha + \beta + \gamma = 1$ .

The following sequence is recommended for the self-assessment of the formation of a graduate's competitiveness qualities.

- (1) A group is assembled of experts comprising personnel service specialists.
- (2) The experts determine the significant factors of the competitiveness indicators, namely,  $\alpha$ ,  $\beta$  and  $\gamma$ .
- (3) The rating scale is clarified, in this case, a five-point ranking scale.
- (4) A self-assessment of the formation of qualities by the graduate is conducted before and after practical training.
- (5) The ratings set for each criterion are summarised as an average rating.
- (6) The indicators are calculated, taking into account the weight and importance of each criterion, which yields the so-called coefficients of the relative importance of the properties.
- (7) The integral indicator of graduate competitiveness is finally calculated.

The authors of this study determined the aforementioned criteria by analysing the requirements of employers, recruiting agencies and scientific publications on the problems related to the competitiveness of graduates, specialists and workers. Based on a survey of more than 150 employers of human resource personnel and students, or which the mailing was carried out to the e-mail addresses of the selected target audience, the coefficients of importance of competitiveness indicators were determined (i.e.  $\alpha$ ,  $\beta$  and  $\gamma$ ). The weight of personal qualities was defined as 0.3, the importance of potential professionalism was 0.5 and the weight of motivation was estimated as 0.2.

The following rating system for the assessment criteria was established: no quality was rated as 1 point; quality is very rare as 2 points; quality is not strong and not weak as 3 points; quality often manifests itself as 4 points and quality is manifested systematically, steadily and clearly as 5 points.

The students evaluated their qualities before starting their practical training and after returning from practical training. Based on the average ratings for each criterion, considering the weighting factors, the integral indicators for the students' competitiveness were calculated. An example of calculating a student's self-esteem is shown in Table 3.

Table 3 Calculation of a graduate student's self-assessment of their level of competitiveness.

№ p/p	Competitive criteria	The average value for the criterion before the start of practical training	The average value for the criterion after practical training	Coefficient of relative significance
1	Personal qualities	4.0	4.0	0.3
2	Skills and potential professionalism	3.9	3.1	0.5
3	Motivation	4.2	3.8	0.2

Source: According to the authors.

Substituting the values obtained in Equation 2 yields the following equation.

$$C_{grad} = \left(\frac{4.0}{4.0}\right)^{0.3} * \left(\frac{3.1}{3.9}\right)^{0.5} * \left(\frac{3.8}{4.2}\right)^{0.2} = 1.0 * 0.89 * 0.98 = 0.87 \quad (3)$$

Equation 2 indicates that with the help of the indicator calculated, a quantitative assessment of the formation of the graduate's competitiveness can be determined. When the indicator value is equal to unity (i.e. 1), the student's competitive qualities are formed and remain at the same level; when the indicator is greater than 1, the student's competitiveness increases and when the indicator is less than 1, the level of competitiveness decreases.

To reduce the subjectivity of the calculation, the assessment of the student's competitiveness after practical training was set by the practical training supervisors from production and the university. The self-esteem related to the student's formation of competitiveness underlies their ability to analyse their own qualities, identify 'weaknesses' and assess the possibilities of further self-education and self-marketing.

The study indicated that before completing practical training, students assessed their competencies and personal qualities at a high level; the prevailing grades were between 4 and 5 points. However, after completing practical training, the self-esteem assessments dropped to between 2 and 4 points.

According to the results of the self-assessment based on the calculation of point scores, this analysis demonstrates that after practical training, the level of competitiveness became lower for 55% of the respondents, did not change for 40% and slightly increased for 5%. An analysis of the reasons for this, according to students, revealed that their grades were either too high or were never fully realised. Changes in the self-assessment of competitiveness primarily affected the motivational and skills and potential professionalism criteria. Therefore, of those students whose level of competitiveness declined, 50% rated their qualities lower on both criteria. Motivational criteria decreased for 22% of the students on items such as professional awareness (60%) and understanding of the purpose of profession (40%). As two students noted, ‘after practical training, I began to better understand what the future profession consists of’ and ‘I realised which disciplines should be paid more attention, which disciplines should be chosen in the next school years’. Notably, 28% decreased their assessments of their skills and potential professionalism.

A comparison of the students’ and university graduates’ professional preferences against employers’ needs yields the following conclusion regarding the reason for most employment problems: an inadequate perception by young people of the realities of the current labour market and moral values owing to the influence of their age. Younger people’s preferences differed significantly from the actual qualities of available job vacancies. Employers, seeking to minimise labour costs, fill vacancies with the job seekers who are most competitive in the labour market. An important role is also played by each student’s level and quality of knowledge and their ability to meet employers’ required criteria. The results of the analysis herein demonstrate that university students, for the most part, have high self-esteem and strive for success but do not have an accurate perception of professional requirements and how their own capabilities and skills comply with these requirements as well as of the demands of the labour market.

It is also necessary to continue determining the criteria for student and worker competitiveness. Certain criteria are now outdated because of changes in the labour market. According to experts, 10 professional skills—multi-level problem solving, emotional intelligence, creative thinking, critical thinking, the ability to collaborate, the ability to manage others, the ability to negotiate, a customer focus and mental flexibility—represent the highest demands that will be required of workers in the near future. [22]. Education should strive to establish these key competencies in students, including intercultural and inter-sectoral knowledge, which relates to the skills and abilities required for adaptation and productivity in various professional communities. The European community attaches particular importance in vocational education to the following five key competencies: social, communicative, socio-information, cognitive and special competencies [23].

As indicated above, the consumer choices of the workforce are influenced by the desires and preferences of employers. Because each employer has their own individual criteria for assessing the satisfaction of their labour needs, competitiveness also acquires a distinctly individual shade depending on the hiring context. The consumer choice of labour is a choice that maximises the utility of combining economic resources in the context of their limitations. In this regard, a more accurate description of the requirements for graduates with a consideration of modern production conditions and the characteristics of the local labour market is required, namely, in relation to their profession, skills and qualifications. It is necessary to develop a system for students to adapt to these conditions, a model that represents the interconnected work areas of business, science, education and production.

As the economic and social wellbeing of Kazakhstan develops and increases, its growth will increasingly depend on maximising efficiency and productivity, which requires skilled labour. To achieve higher-order development, Kazakhstan should implement several recently launched initiatives in other regions to expand access to education, improve the quality of employment and strengthen social integration. This includes restructuring the national model for the accreditation of higher educational institutions, which might help internationalise Kazakhstan’s educational system, and implementing labour reforms that contribute to increasing productivity.

#### 4. Conclusions

In summary, it is worth noting that the solution to the problem of an imbalanced labour market is a condition for the successful functioning and progressive development of any national economy. Inconsistencies in the structure of the demand for labour and the structure of its supply give rise to numerous negative consequences.

The state's regulatory measures might partially rectify the situation, such as through the allocation of additional funding for students with engineering specialties, scholarship support for these students and additional funds for vocational training and the retraining of engineering personnel. However, these measures will not fully address the problem of the shortage in the sought-after specialists.

Clearly, the educational services market and universities play a role in this process as the subjects of this market. The specifics of the aforementioned market are determined by the features of the goods it provides, namely, educational services. Recently, educational services have been simultaneously considered a public and private good, which suggests that it would be advisable to combine state and market mechanisms for regulating the implementation of educational services in the relevant market. On one hand, the state can acquire more complete and up-to-date information on the labour market situation and take more timely and appropriate measures to solving pressing issues. Specifically, the state can influence the training structure of young specialists, having the necessary financial, ideological and social instruments, among others. On the other hand, we can observe the insufficient efficiency and effectiveness of the state's attempt to address the problem we are analysing. The state does not carry out the proper forecasting of the need for specialists and the corresponding planning for the training of qualified personnel in the quantity and at the level that is demanded by the economy in actuality.

The incorrect orientation of young people to a future profession demanded by the labour market is largely due to a lack of information, an inability to anticipate the situation in the labour market over the long term (i.e. the higher the level of qualifications obtained is, the longer the training process is) and distorted ideas regarding the prestige of certain professions. Often, an applicant's professional choice is determined by the salary received by highly qualified specialists with solid work experience at the outset of professional training. The changing situation in the labour market during training and the low level of remuneration for young specialists explains the refusal of university graduates to work in their specialty, which can further exacerbate supply and demand imbalances in the labour market. There is a situation in which the demand for educational services (i.e. professional competencies) is not determined by the needs of production, and the supply of labour services is largely determined by the needs and ambitions of the young people who receive vocational education. Thus, there is no effective mechanism for the interaction between the educational services market and the labour market wherein the latter can act as a direct 'customer' of professional educational services.

The need to predict the demand for specialists with a certain level of training and in the relevant areas at the state and regional level is a considerably urgent task, followed by the task of implementing the appropriate measures. Although the producer (employer) is the 'final' consumer of the 'product' of the educational process, an individual employer does not have sufficient resources for the independent professional training of the specialists that they require. The interaction between the labour and the educational services market should be regulated at the state level.

A number of factors influence the interaction of these markets, including migration processes, the demographic situation, state and public regulations, the economic structure and the state employment policy. When regulating the mechanism of interaction between the labour market and the educational services market, the state must observe a balance between the private and public interests of all entities, adhering to a reasonable decentralisation of the management of the interaction processes between employers and professional educational institutions.

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